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18 July 1995

Commissioners Hundt, Barrett, Chong, Ness and Quello
c/o Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

21 1995

Re: "NII Band Proposal" (RM-8653)

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Dear Commissioners:

This letter is submitted in response to the first round of comments on the proposal filed by Apple Computing, Incorporated, for spectrum allocation for a wireless component of the National Information Infrastructure ("NII"). My comments are submitted as a member of the technical community, an amateur radio licensee dating back to the early 1960s and an avid networking enthusiast.

Unfortunately, I didn't become aware of the Apple Computing proposal until just prior to the deadline for the first round of public comments. Although I did obtain a copy of the filing and several initial public comments, I was not able to obtain a copy of the counterpart to Apple's proposal (viz., RM-8648, which was submitted by WINForum) in order to perform a side-by-side comparison. In any case, insufficient time existed for me to meet the deadline for first round comments.

Nevertheless, after reviewing the proposal, I became highly enthused and immediately communicated a synopsis to colleagues and acquaintances in the computing and communications fields. In general, the response was very positive, and in several instances it was almost electrifying.

For this reason alone I strongly recommend that consideration of this issue be extended, so that the technical community can become better aware of all proposals currently on the table.

Among my initial contacts there seems to be little doubt that the emerging National Information Infrastructure can and should include a wireless component, thereby extending NII networking into the radio and perhaps eventually the optical portions of the electromagnetic spectrum.

The Apple proposal seeks to have a portion of the spectrum in the neighborhood of 5 GHz set aside as public domain, for type-accepted equipment employing spread spectrum and other modulation methods.

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Apple envisions that this act would facilitate the appearance of a highly autonomous, decentralized system of distributed, privately-owned communications equipment, and that whole new industries would emerge and flourish.

Indeed, this plan would stimulate competition to existing telephone common carriers, whose network structure relies on centralized facilities and a voice circuit switching hierarchy replete with traffic choke points. In contrast, the Apple proposal endorses a diametrically opposite approach.

Thus, much-needed variety would be injected into the realm of technical choices of communication options. The citizens of this nation would unquestionably enjoy the fruits of this competition, not only of products, but of ideas and approaches as well.

However, one of the most important and apparently overlooked aspects of this proposal is the potential positive impact it can have on national security, whether it is considered in light of a foreign aggression, a civil insurrection or a social, political or economic collapse.

A distributed, decentralized wireless network is a logical extension of the scheme envisioned by the planners at the Rand Corporation who laid the foundation for what has become the incredibly successful Internet computing network. In those Cold War years of the early 1960s, the Rand researchers determined that the most likely way for the nation to restore itself following a widespread national emergency would be through the use of interconnected regional and local computing centers.

Thus, the national security aspect of this proposal is a compelling additional reason to extend the deadline for comments.

The passage of thirty years has witnessed the virtual explosion of the size of the Internet, and has proven the underlying premise.

But the Apple proposal would take this concept a step further by giving individual citizens yet another communication option. Unencumbered by a landline umbilical or reliance on centralized third party communications carriers, new vistas of freedom in communication would be generated for local, limited range services.

We Americans frequently pay lip service to the belief that the free expression of ideas is a cornerstone of liberty. In a sense, the Apple approach would facilitate the kind of activity in which the Founders engaged at the outset of this country,

namely, peer-to-peer networking a la the Committees of Correspondence. How much better to keep alive the spirit of liberty than at the level of the lowest common denominator?

The Apple proposal itself is modest enough. One might expect, given my introductory comments and the traditional defensive attitude of various spectrum occupants concerning "their" territory, that I would oppose RM-8653 because of its potential impact on amateur radio activities in the 5725-5875 GHz segment of the targeted band. Although this is indeed of concern to me, I feel the general benefit which can be derived from the Apple proposal of staking out a *public domain* wireless band outweighs this latent objection. Unfortunately, I cannot say the same for the the WINForum proposal, since it seems to take a more traditional approach.

However, I would like to inject a sentiment here which I hope will be favorably considered by the Commission.

I feel it is vitally important that a portion of the targeted 5 GHz area remain available for amateur radio operations which parallel or complement the unlicensed, wireless utilization of the proposed 300 MHz segment.

There can be no denying the contributions of the amateur radio fraternity over the nearly 100 years of its service to this nation. As an avocation, amateur radio prospers in the true free marketplace of ideas and individual action, unaffected by profit motive or time-to-market deadlines.

The amateur radio packet networks are a premier example of the result of amateur radio efforts in wireless networking.

Among the various impediments to development by the amateur radio service of its allocated upper spectrum bands are the cost and availability of components and test equipment.

If the Apple proposal is implemented, then the expected rapid development of this wireless band will in all probability also result in favorable fallout of components and test equipment for the amateur radio community.

Recall also that the amateur radio community tends to self-police and to cooperatively arrange for the utilization of its assigned bands by its members. These considerations are important if the amateur radio service is to be allowed to co-occupy the proposed NII wireless band under interference-limiting constraints, but without being subjected to type-acceptance requirements.

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It is extremely important to me that the amateur radio presence in the affected spectrum not be significantly disenfranchised or displaced by the Apple proposal. It occurs to me that Part 97 and Part 15 co-utilization of the referenced band could have a highly synergistic effect on its overall evolution.

Finally, I would like to suggest that the efficiency of information transmittal and conservation of bandwidth be among the specific criteria guiding the resolution of any interference or utilization disputes which may arise.

With the above observations and qualifications in mind, I can conclude that I am generally very much in favor of the NII wireless band proposal by Apple Computing.

Sincerely,

A handwritten signature in dark ink, appearing to read "Lee Knoper". The signature is fluid and cursive, with the first name "Lee" being more prominent and the last name "Knoper" following in a similar style.

Lee Knoper
N7CUU (ex-WN7CTH, ex-WA7FVX)

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cys: (1) Attached
(2) Suspense